

CLAIMS:

1. A synchronous transmission apparatus for use in a synchronous transmission network in which data signals are carried on transmission paths, the data signals being arranged in container units which are arranged in data frames, each container unit being associated with respective pointer bits which indicate the position of the container unit within a respective data frame, the apparatus comprising:

first and second data ports each arranged to receive a first data signal carried on a respective first and second transmission path;

a path selection module, co-operable with each of said first and second data ports and arranged to select one or other of said first and second transmission paths;

20 a third data port, co-operable with the path selection module to output data received on the selected one of said first and second transmission paths,

the third data port being arranged to receive a second data signal on a respective transmission path and to communicate said second data signal to each of said first and second data ports for output thereby; and

a message encoding module, arranged to determine which of said first and second transmission paths is selected, and being co-operable with said second data signal transmission path to adjust at least one of the pointer bits associated therewith to indicate said path selection,

each of said first and second data ports being co-operable with the second data signal transmission path to determine the setting of said at least one pointer bit and thereby 10 to determine which of the first and second data paths is selected.

2. An apparatus as claimed in Claim 1, wherein said pointer bits include new data flag (NDF) bits, said 15 message encoder module being arranged to adjust one or more of said new data flag (NDF) bits.

3. An apparatus as claimed in Claim 1, wherein the apparatus is arranged to generate new pointer bits to 20 adapt the second data signal to the local timing of the apparatus, the message encoder module being arranged to adjust at least one pointer bit of said generated new pointer bits.

25 4. An apparatus as claimed in Claim 1, wherein the apparatus is arranged to generate new pointer bits to adapt the second data signal to the local timing of the apparatus, the adjustment of said at least one pointer bit

being effected during the generation of said new pointer bits.

5 6. A data port for synchronous transmission apparatus for
use in a synchronous transmission network in which data
signals are carried on transmission paths, the data
signals being arranged in container units which are
arranged in data frames, each container unit being
associated with respective pointer bits which indicate the
10 position of the container unit within a respective data
frame, the data port being arranged to receive a first
data signal from a selected one of a first and a second
transmission path, and being further arranged to receive a
second data signal on a respective transmission path, the
15 data port including a message encoding module, arranged to
determine which of said first and second transmission
paths is selected, and being co-operable with said second
data signal transmission path to adjust at least one of
the pointer bits associated therewith to indicate said
20 path selection.

6. In a synchronous transmission apparatus for use in a
synchronous transmission network in which data signals are
carried on transmission paths, the data signals being
25 arranged in container units which are arranged in data
frames, each container unit being associated with
respective pointer bits which indicate the position of the
container unit within a respective data frame, the
apparatus comprising first and second data ports each

arranged to receive a first data signal carried on a respective first and second transmission path; a path selection module, co-operable with each of said first and second data ports and arranged to select one or other of
5 said first and second transmission paths; a third data port, co-operable with the path selection module to output data received on the selected one of said first and second transmission paths, the third data port being arranged to receive a second data signal on a respective transmission
10 path and to communicate said second data signal to each of said first and second data ports for output thereby, a message signalling method comprising

15 determining which of said first and second transmission paths is selected;

adjusting, at said third data port, at least one of the pointer bits associated with said second data signal path to indicate said path selection;

20 determining, at each of said first and second data ports, the setting of said at least one pointer bit thereby to determine which of the first and second data paths is selected.

25 7. A method as claimed in claim 6, wherein said pointer bits include new data flag (NDF) bits, the method including adjusting at least one new data flag (NDF) bit to indicate said path selection.

8. A synchronous transmission apparatus for use in a synchronous transmission network in which data signals are carried on transmission paths, the data signals being
5 arranged in container units which are arranged in data frames, each container unit being associated with respective pointer bits which indicate the position of the container unit within a respective data frame, the apparatus including two data ports, one of said data ports
10 being arranged to receive a first data signal on a respective data path, the other data port being arranged to receive a second data signal on a respective data path, said one data port being arranged to communicate said first data signal to said other data port, said other data port being arranged to communicate said second data signal to said one data port, wherein in order to communicate a message relating to said first data signal from said other data port to said one data port, said other data port is arranged to embed said message in one or more pointer bits
15 associated with the path of said second data signal, said one data port being arranged to determine said message by examining said one or more pointer bits.

9. An apparatus as claimed in claim 8, wherein said
25 pointer bits include new data flag (NDF) bits and said message is embedded in one or more of said new data flag (NDF) bits.

10. In a synchronous transmission apparatus for use in a synchronous transmission network in which data signals are carried on transmission paths, the data signals being arranged in container units which are arranged in data frames, each container unit being associated with respective pointer bits which indicate the position of the container unit within a respective data frame, the apparatus including two data ports, one of said data ports being arranged to receive a first data signal on a respective data path, the other data port being arranged to receive a second data signal on a respective data path, said one data port being arranged to communicate said first data signal to said other data port, said other data port being arranged to communicate said second data signal to said one data port, a message signalling method comprising

embedding, at said other data port, a message relating to said first data signal in one or more pointer bits associated with the path of said second data signal;

examining, at said one data port, said one or more pointer bits to determine said message.

25 11. A method as claimed in claim 10, wherein said pointer bits include new data flag (NDF) bits, the method including embedding said message in one or more of said new data flag (NDF) bits.

12. A synchronous transmission apparatus for use in a synchronous transmission network in which data signals are carried on transmission paths, the data signals being arranged in container units which are arranged in data frames, each container unit being associated with respective pointer bits which indicate the position of the container unit within a respective data frame, the pointer bits including new data flag (NDF) bits, the apparatus comprising two or more data ports and being arranged to communicate data signals between data ports on respective transmission paths, wherein in order to signal a message between data ports, the apparatus is arranged to embed said message in one or more of said new data flag (NDF) bits associated with the transmission path of a data signal being communicated between said data ports.

13. In a synchronous transmission apparatus for use in a synchronous transmission network in which data signals are carried on transmission paths, the data signals being arranged in container units which are arranged in data frames, each container unit being associated with respective pointer bits which indicate the position of the container unit within a respective data frame, the pointer bits including new data flag (NDF) bits, the apparatus comprising two or more data ports and being arranged to communicate data signals between data ports on respective transmission paths, a message signalling method comprising

embedding a message in one or more of said new data flag (NDF) bits associated with the transmission path of a data signal being communicated between said data ports.